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1772

DATE MAILED: 05/15/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 09/777,012 | | LE ROY ET AL. | |
| | Examiner | | Art Unit | |
| | Marc A Patterson | | 1772 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 112 second paragraph rejections of Claims 1 – 20 and 35 U.S.C. 102(b) rejection of Claims 1, 7, 11 – 14 and 18 as being anticipated by Beuzelin et al (U.K. Patent No. 2288177), 35 U.S.C. 103(a) rejection of Claims 2 – 6, 8 and 19 – 20 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177), 35 U.S.C. 103(a) rejection of Claim 9 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Zhang et al (U.S. Patent No. 5,516,583) and 35 U.S.C. 103(a) rejection of Claims 10 and 15 – 17 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Melot et al (U.S. Patent No. 5,998,545), of record on page 2 of the previous Action, are withdrawn.

NEW REJECTIONS

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21 – 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 21 – 42 include letters in parentheses (A, B, C, C1, C2, D, D1, D2, E, F, F1, F2, as in polyamide (A), polyolefin (B1), etc.), which are indefinite as it is unclear whether the letters denote special formulations of the components. The term 'EVOH' in Claims 21 – 42 is indefinite as the term has not been defined. For purposes of examination, the term will be assumed to mean 'ethylene vinyl alcohol.'

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4. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term 'containing 2 to 40% by weight of insolubles in n – decane at 90 degrees Celsius' is indefinite, as it is unclear what chemical products 'insolubles' refer to (The polyethylene itself? It is partially insoluble in n – decane at 90 degrees Celsius). For purposes of examination, the claim will be assumed to be directed to any polyethylene grafted with maleic anhydride.

5. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase 'which results from the reaction of a polyamide with a copolymer comprising polypropylene and a grafted or copolymerized unsaturated monomer X' is indefinite as the reaction has not been defined, nor has unsaturated monomer 'X.'

6. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase 'is capable of reacting to form a crosslinked phase' is indefinite, as it is unclear if a reaction to form a crosslinked phase is being claimed or not. For purposes of examination, it will be assumed that a reaction is not being claimed.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 21, 27, 31 – 34 and 40 – 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Beuzelin et al (U.K. Patent No. 2288177).

With regard to Claim 21, Beuzelin et al disclose a structure comprising, successively, a first layer of high density polyethylene, a layer of binder, and a second layer of ethylene vinyl alcohol (page 13, line 11 and lines 16 – 23); the binder is a mixture of polyamide and polyolefin and polyamide (polyamide grafted onto polyolefin; page 4, lines 16 – 29; page 5, lines 1 – 29; page 6, lines 1 – 4), and the structure comprises a third layer of binder (page 13, line 11); the structure therefore comprises a third layer of a mixture of polyamide and polyolefin (bonding the ethylene vinyl alcohol layer to a polystyrene layer; however, as the claimed third layer is ‘optional,’ it is not necessary for Beuzelin et al to disclose the third layer for Beuzelin et al to qualify as prior art under 35 U.S.C. 102 (b)).

With regard to Claim 27, the binder is a polyethylene grafted with maleic anhydride (page 5, lines 6 – 11), and a melt flow index of 7 g/10 min (page 22, lines 5 – 8) and a density between 0.920 and 0.930 g/cc.

With regard to Claims 31 – 32, the third layer comprises a high density polyethylene and very low density polyethylene (page 9, lines 7 – 19) cografted with an unsaturated carboxylic acid (fumaric acid; page 5, lines 12 – 29).

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With regard to Claim 33, the third layer comprises polypropylene and another polyolefin (page 9, lines 7 – 19).

With regard to Claim 34, the third layer comprises a mixture of polyethylene and very low density polyethylene and an ethylene – alkyl methacrylate – maleic anhydride copolymer (page 5, lines 6 – 27).

With regard to Claims 40 – 42, Beuzelin et al discloses a food container which contains a fluid (air) consisting of the structure (page 15, lines 16 – 23); the third layer is therefore in direct contact with the fluid which is contained.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 22 – 26, 28 and 39 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177).

Beuzelin et al disclose a laminate structure comprising a layer of binder as discussed above. With regard to Claim 22, Beuzelin et al fail to disclose two layers of binder between the ethylene – vinyl alcohol layer and polystyrene layer. However, Beuzelin et al disclose one layer of binder between the ethylene – vinyl alcohol layer and polystyrene layer, as discussed above. Therefore, the number of layers of binder would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the

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product. It therefore would be obvious for one of ordinary skill in the art to vary the number of layers of binder, since the number of layers of binder would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Beuzelin et al. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claims 23, 26 and 38 – 39, Beuzelin et al disclose a third layer which comprises a mixture of polyethylene and very low density polyethylene having a density of between 0.880 and 0.970 (page 9, lines 7 – 19) and a melt flow index of 7 g/10 min (page 22, lines 5 – 8); Beuzelin et al fail to disclose a polymer which comprises a third layer which comprises 70 – 95% of a mixture of polyethylene and very low density polyethylene and a content of grafted unsaturated carboxylic acid between 30 and 10,000 ppm.

However, Beuzelin et al disclose a layer which comprises at least 1% of a mixture of polyethylene and very low density polyethylenes having a density of between 0.880 and 0.970 (the layer comprises a mixture of polyethylene and very low density polyethylenes having a density of between 0.880 and 0.970; page 9, lines 1 – 19) and a content of grafted unsaturated carboxylic acid of 0.005 to 5% by weight of grafted carboxylic acid (page 5, lines 17 – 24). Therefore, the amount of the polyethylene mixture and the amount of grafted carboxylic acid would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the amount of the polyethylene mixture and the amount of grafted carboxylic acid, since the amount of the polyethylene mixture and the amount of grafted carboxylic acid would be readily determined through routine optimization by one having

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ordinary skill in the art depending on the desired end result as shown by Beuzelin et al *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claim 24, the density of the binder is between 0.880 and 0.970 g/cm³ (page 9, lines 7 – 19).

With regard to Claim 25, the polyethylene is linear low density polyethylene (page 9, lines 7 – 19).

With regard to Claim 28, the grafted polyethylene is mixed with ethylene – vinyl acetate copolymer (page 11, lines 11 – 14); both the grafted polyethylene and ethylene – vinyl acetate have densities between 0.880 and 0.970. Beuzelin et al do not teach that the ethylene vinyl acetate is grafted; the claimed aspect of the grafted polyethylene being ‘diluted with an ungrafted polyethylene’ therefore reads on Beuzelin et al. Beuzelin et al fail to disclose from 70 to 98 % by weight non – grafted polyethylene.

However, Beuzelin et al disclose at least 1% by weight non – grafted polyethylene by weight (the mixture comprises non – grafted polyethylene; page 11, lines 11 – 14. Therefore, the amount of non – grafted polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the amount of non – grafted polyethylene, since the amount of non – grafted polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Beuzelin et al *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

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11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Zhang et al (U.S. Patent No. 5,516,583).

Beuzelin et al disclose a laminate structure comprising a layer of binder as discussed above. The binder consists of very low density polyethylene (page 9, lines 7 – 19), 5 – 35% by weight grafted polyethylene and 5 – 45% by weight polystyrene elastomer (page 3, lines 18 – 24; page 10, lines 24 – 29; page 11, lines 1 – 14). Beuzelin et al fail to disclose a polyethylene which is a metallocene polyethylene.

Zhang et al teach the use of metallocene polyethylene in the making of an adhesive (column 4, lines 17 – 30) for the purpose of making an adhesive having excellent extrudability (column 2, lines 24 – 32). The desirability of providing for a metallocene polyethylene and Beuzelin et al, which comprises an adhesive, would therefore be obvious to one of ordinary skill in the art in view of Zhang et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for metallocene polyethylene in Beuzelin et al in order to make an adhesive having excellent extrudability as taught by Zhang et al.

12. Claims 30 and 35 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Melot et al (U.S. Patent No. 5,998,545).

Beuzelin et al disclose a laminate structure comprising a layer of binder comprising polyamide as discussed above. With regard to Claims 30 and 35, Beuzelin et al fail to disclose a polyamide which comprises a copolymer comprising polyamide 6 and polytetramethylene glycol blocks.

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Melot teaches the grafting of styrene – polyolefin blends with copolymers having polyamide 6 blocks and polytetramethylene glycol blocks (column 4, lines 15 – 19) for the purpose of making films having good stability after extrusion (column 4, lines 59 – 67). The desirability of providing for polyamide which comprises a copolymer comprising polyamide 6 and polytetramethylene glycol blocks in Beuzelin et al, which comprises a styrene – polyolefin blend, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a copolymer having polyamide 6 blocks and polytetramethylene glycol blocks in Beuzelin et al in order to make films having good stability after extrusion as taught by Melot.

With regard to Claim 36, the binder disclosed by Beuzelin et al comprises a mixture of polyethylene and very low density polyethylene and an ethylene – alkyl methacrylate – maleic anhydride copolymer (page 5, lines 6 – 27).

With regard to Claim 37, the binder disclosed by Beuzelin et al comprises two functionalized polyolefins comprising at least 40% ethylene (low density polyethylene and linear low density polyethylene; page 9, lines 7 – 19); the claimed aspect of the polyolefins comprising 50% ethylene therefore reads on Beuzelin et al.

ANSWERS TO APPLICANT'S ARGUMENTS

13. Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejections of Claims 1 – 20 and 35 U.S.C. 102(b) rejection of Claims 1, 7, 11 – 14 and 18 as being anticipated by Beuzelin et al (U.K. Patent No. 2288177), 35 U.S.C. 103(a) rejection of Claims 2 – 6, 8 and

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19 – 20 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177), 35 U.S.C. 103(a) rejection of Claim 9 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Zhang et al (U.S. Patent No. 5,516,583) and 35 U.S.C. 103(a) rejection of Claims 10 and 15 – 17 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Melot et al (U.S. Patent No. 5,998,545), of record on page 2 of the previous Action, have been carefully considered but have not been found to be persuasive for the reasons set forth below.

Applicant argues, on page 8 of Paper No. 9, that the designator letters for the various components do not make the claims indefinite, as it is common in claims to have designators to differentiate between different elements of the invention. However, as stated on page 2 of the previous Action, it is unclear whether the letters denote special formulations of the components the use of design; furthermore, the use of letter designators is not common U.S. practice.

Applicant also argues, on page 9, that the phrase '2 to 40% weight insolubles' is not indefinite because the phrase clearly defines a property determined by the percentage range of the component which is not dissolved in n – decane. However, as stated on page 2 of the previous Action, the meaning of the phrase 'containing insolubles' is unclear, specifically whether the polyethylene grafted with maleic anhydride is partially insoluble or if the polymer contains a separate component which is insoluble in n – decane.

Applicant also argues, on page 9, that the phrase 'unsaturated monomer X' is not indefinite, as the term 'X' is merely a designator for the component. However, the use of the designator renders the claim indefinite, as discussed above, especially because the designator letters appear to skip from 'G' to 'X'. Furthermore, even in the absence of the designator, the unsaturated the chemical nature of the claimed unsaturated monomer has not been defined.

Applicant also argues, on page 10, that the phrase 'which is capable of reacting' is not indefinite, as it is within the metes and bounds of the claimed recitation. However, as stated on page 2 of the previous Action, the use of the phrase makes it unclear if a reaction to form a crosslinked phase is being claimed or not.

Applicant also argues, on page 10, that Beuzelin is not directed to a structure with successive layers high density polyethylene, ethylene vinyl alcohol and polyamide. However, the claimed invention is not directed to a structure with successive layers high density polyethylene, ethylene vinyl alcohol and polyamide, as a layer of binder is claimed between the high density polyethylene and ethylene vinyl alcohol layers. Furthermore, as stated on page 2 of the previous Action, Beuzelin et al disclose a structure comprising, successively, a first layer of high density polyethylene, a layer of binder, and a second layer of ethylene vinyl alcohol (page 13, line 11 and lines 16 – 23); the binder is a mixture of polyamide and polyolefin and polyamide (polyamide grafted onto polyolefin; page 4, lines 16 – 29; page 5, lines 1 – 29; page 6, lines 1 – 4), and the structure comprises a third layer of binder (page 13, line 11); the structure therefore comprises a third layer of a mixture of polyamide and polyolefin.

Applicant also argues, on page 11, that the binder layer of Beuzelin cannot be considered a layer of the multilayer structure. However, as the binder of Beuzelin is use in the binding of layers to each other, and is between the layers, it clearly constitutes a layer.

Applicant also argues, on page 11, that Beuzelin's binder comprises polystyrene, as well as polyamide and polyolefin. However, the claimed invention, which comprises a polyamide / polyolefin mixture, does not exclude a layer which also comprises polystyrene.

Applicant also argues on page 11 that Beuzelin discloses a polyolefin grafted with amide, rather than a polyamide / polyolefin mixture. However, the claimed invention is also directed to a polyamide, which does not exclude a polyolefin grafted with amide.

Applicant also argues on page 11 that Beuzelin does not disclose high density polyethylene as the particular polyolefin layer, although high density polyethylene is listed as one of the possible polyolefins to select from, however, if high density polyethylene is one of the possible polyolefins to select from than it is clearly disclosed as the layer.

Applicant also argues on page 12 that Beuzein does not disclose a third layer and a binder layer between the second and third layer. However, as stated above, the number of layers of binder would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the number of layers of binder, since the number of layers of binder would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Beuzelin et al. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

Applicant also argues on page 12 that Beuzelin does not encompass a binder containing a metallocene polyethylene. However, as on page 2 of the previous Action, Zhang et al teach the use of metallocene polyethylene in the making of an adhesive (column 4, lines 17 – 30) for the purpose of making an adhesive having excellent extrudability (column 2, lines 24 – 32).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for metallocene polyethylene in Beuzelin et al in order to make an adhesive having excellent extrudability as taught by Zhang et al.

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Applicant also argues on page 14, that Melot does not teach a high density polyethylene / ethylene vinyl alcohol / polyamide structure, therefore its combination with Beuzelin et al is improper. However, as stated on page 2 of the previous Action, Melot teaches the grafting of styrene – polyolefin blends with copolymers having polyamide 6 blocks and polytetramethylene glycol blocks (column 4, lines 15 – 19) for the purpose of making films having good stability after extrusion (column 4, lines 59 – 67).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a copolymer having polyamide 6 blocks and polytetramethylene glycol blocks in Beuzelin et al in order to make films having good stability after extrusion as taught by Melot.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
Art Unit 1772

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

5/14/03